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(71) Applicant: **Haldor Topsoe A/S**
2800 Kgs. Lyngby (DK)

(72) Inventor: **Hommeltoft, Sven Ivar**
3400 Hillerod (DK)

(54) Continuous process for the removal of water from a hydrocarbon stream

(57) Process for the continuous drying of a hydrocarbon stream at a temperature being effective in drying the stream with an ionic liquid drying agent comprising a salt of sulphuric acid being in liquid or melted form at the drying temperature.

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(continued)

1. Contact Column (Hydrocarbon drying)	
Ionic liquid flow, g/h	325
Before treatment Wet hydrocarbon feed, ppm water	80
After treatment (product) Dry hydrocarbon product, ppm water	8
Hydrocarbon feed temperature °C	20
Ionic liquid feed temperature °C	20
Hydrocarbon/Ionic liquid rate	0.9

2. Stripping column (Ionic liquid drying)	
Ionic liquid flow, g/h	325
Heptane flow, g/h	approximately 500
Ionic liquid feed temperature °C	(preheated to approximately 100°C)
Heptane feed temperature °C	98

Example 2

[0009] This experiment was performed in the same equipment as used in Example 1 but instead of diethylmethylammonium bisulphate, $Et_2MeNH^+.HSO_4^-$, a mixture of 164 g $Et_2MeNH^+ HSO_4^-$ and 83 g 96% H_2SO_4 (1:1 molar ratio) was used.

1. Contact Column	
Hydrocarbon flow (feed), g/h	514
Ionic liquid flow, g/h	325
Before treatment Wet hydrocarbon feed, ppm water	49
After treatment (product) Dry hydrocarbon product, ppm water	7
Hydrocarbon feed temperature °C	20
Ionic liquid feed temperature °C	20
Hydrocarbon/Ionic liquid rate	1.6

2. Stripping column	
Ionic liquid flow, g/h	409
Heptane flow, g/h	Approximately 500
Before treatment Wet ionic liquid, ppm water	104
After treatment Dry ionic liquid, ppm water	66
Ionic liquid feed temperature °C	(Preheated to approximately 100°C)
Stripping temperature °C	175

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EUROPEAN SEARCH REPORT

Application Number
EP 03 00 6546

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 4 484 933 A (COHEN ALAN P) 27 November 1984 (1984-11-27) ---		C07C7/10
A	US 3 793 187 A (MARX H ET AL) 19 February 1974 (1974-02-19) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) C07C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	2 July 2003	Van Geyt, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

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